

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

To:

PCT

Translation

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

Date of mailing
(day/month/year)

Applicant's or agent's file reference

FC03017WO

FOR FURTHER ACTION

See paragraph 2 below

International application No.

PCT/EP2004/008229

International filing date (day/month/year)

23.07.2004

Priority date (day/month/year)

27.07.2003

International Patent Classification (IPC) or both national classification and IPC

Applicant

FEMEAS GMBH

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☒ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA/EI

Authorized officer

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C24

WRITTEN OPINION OF THE
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Box No. I Basis of this opinion

1. With regard to the **language**, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.
☐ This opinion has been established on the basis of a translation from the original language into the following language _____, which is the language of a translation furnished for the purposes of international search (under Rule 12.3 and 23.1(b)).
2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
 - a. type of material
☐ a sequence listing
☐ table(s) related to the sequence listing
 - b. format of material
☐ in written format
☐ in computer readable form
 - c. time of filing/furnishing
☐ contained in the international application as filed.
☐ filed together with the international application in computer readable form.
☐ furnished subsequently to this Authority for the purposes of search.
3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table(s) relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

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Box No. II

Priority

1. ☒ The following document has not yet been furnished:

☒ copy of the earlier application whose priority has been claimed (Rule 43*bis*.1 and 66.7(a)).

☐ translation of the earlier application whose priority has been claimed (Rule 43*bis*.1 and 66.7(b)).

Consequently it has not been possible to consider the validity of the priority claim. This opinion has nevertheless been established on the assumption that the relevant date in the claimed priority date.

2. ☐ This opinion has been established as if no priority had been claimed due to the fact that the priority claim has been found invalid (Rules 43*bis*.1 and 64.1). Thus for the purposes of this opinion, the international filing date indicated above is considered to be the relevant date.

3. Additional observations, if necessary:

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Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims		YES
	Claims	1-26	NO
Inventive step (IS)	Claims		YES
	Claims	1-26	NO
Industrial applicability (IA)	Claims	1-26	YES
	Claims		NO

2. Citations and explanations:

1. Prior art

The following search report citations (1)-(8) are specified for the first time in this **written opinion**; the same numbering will be used throughout the procedure.

- (1) WO-A-02/081 547
- (2) WO-A-02/071 518
- (3) WO-A-02/088 219
- (4) WO-A-02/036 249
- (5) WO-A-03/022 412
- (6) WO-2004/003 061
- (7) WO-2004/031 135
- (8) WO-2004/024 796

2. Novelty

2.1 The documents (6), (7) and (8) are mentioned only with regard to **PCT Rules 33.1, 64.3 and 70.10** and are therefore disregarded in this written opinion. In regional/national proceedings, (6)-(8) would have to be taken into account as relative prior art for the part which cannot claim the priority date.

2.2 Claim 1 and the claims 2-21 which refer back thereto have been formulated in the form of a **"product-by-process"** claim. The product characterized/produced by it has to be both novel and inventive per se. A product does not become novel purely as a result of the fact that it is produced by a novel process. The applicant is asked to establish the **novelty** in the known way in order to meet the requirements of **PCT Article 33(2)**. In view of the absence of technical elements which establish novelty for the claimed polymer

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membranes, the criterion for novelty as stated in **PCT Article 33(2)** is at present not met.

2.3 **Polyazoles** for producing polymer membranes (PEMs) for fuel cells are known from citations (1)-(8). A difference from the compounds of the application could lie essentially in the production process since, for example, the proton-conducting membranes produced in (1) could be produced from heteroaromatic tetraamino derivatives and aromatic carboxylic acids coming under the claims of the application. A structural/technical element which would establish novelty is not visible at present. The criterion for novelty stated in **PCT Article 33(2)** is thus not met.

3. Inventive step

3.1 Since the assessment of the **inventive step** (**PCT Article 33(3)**) can be carried out only for a novel subject matter of the application, the following statements are merely provisional. The technical problem to be solved by the subject matter of the application is to be established on the basis of the closest comparable prior art (**PCT Rule 5.1(a)(iii)**).

This **problem** could be considered to be, starting out from the block polymer membranes known from (1) and/or (3), the provision of further block polymer membranes having the improved properties (see present application page 21, lines 15-21). However, the application at present gives no indication that this problem has in actual fact been solved.

It is pointed out that the solution of the problem by producing further block polymer membranes is obvious to a person skilled in the art, since the mechanism of proton conduction is best known for polyazole membranes and such membranes are used in fuel cells. An inventive step could therefore be acknowledged only for the solution of the above-addressed problem. Since no such effects compared to the closest prior art have been presented up to now, the requirements for acknowledgment of an inventive step within the meaning of **PCT Article 33(3)** are not met.

3.2 With regard to the **selection of the closest comparable prior art**, it is pointed out that in the case of an invention which comprises the modification of a known subject matter for improving its known effect, the changing feature not only has to characterize

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Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability;
citations and explanations supporting such statement

the invention, i.e. distinguish it from the prior art, but also has to make a causal contribution to improving the achieved effect. In the present case, a comparison would therefore have to be made with the process of the prior art which under otherwise identical conditions would have to be distinguished **exclusively** in terms of the novel technical features to be stated (not visible at present, see above). The requirements of **PCT Article 33(3)** are at present not met.

3.3 Information which does concern the subject matter of the invention (e.g. further details regarding the advantages of the invention or the problem to be solved) but is not present in the original application can only be mentioned in the written reply but not be incorporated into the application (**PCT Article 34(2)(b)**). To aid examination of an amended application with regard to **PCT Article 34(2)(b)**, the applicant is asked to clearly indicate the points in the originally filed application which report the changes made, regardless of whether the changes are additions, replacements or deletions (see also **PCT Rule 66.8(a)**). If appropriate, this information can be provided in hand-written form on copies of the relevant parts of the original application.

3.4 The description will have to be brought into accord with any revised claims (**PCT Article 41** in conjunction with **PCT Article 6**). However, **PCT Article 19(2)** has to be observed strictly in the case of all amendments (cf. **Guidelines C-VI, 7.8-7.12**). The applicant's attention is drawn to the fact that the application must not be altered in such a way that its subject matter goes beyond the contents of the application in the version originally filed (**PCT Article 34(2)(b)**).

4. Industrial applicability

If the polymer membranes claimed were to have advantages which could not be derived from the prior art, there would be no concern about industrial applicability (**PCT Article 33(4)**).